

(d) REMARKS

The claims are 1 and 2, with claim 1 being independent. Claim 1 has been amended to claim the Zn amount per magnetic iron oxide of 0.29 to 0.57%, pursuant to Table 3, page 49. In Table 3, magnetic iron oxides 1-3 are recited in which content of Zn, in % by mass, is 0.57% to 0.29% and 0.42%, respectively. Applicants submit that no new matter has been added by the amendments. Applicants respectfully request reconsideration of the pending claims.

Claims 1 and 2 stand rejected under 35 U.S.C. §103(a) as obvious over Kobori (U.S. Patent No. 6,007,957) combined with Doujo (U.S. Patent No. 5,773,183). Applicants respectfully traverse the rejection.

At the outset, Applicants believe that a brief review of the features and advantages of the present invention would be helpful. The present invention is directed to a magnetic toner comprising a polyester binder resin and a specific magnetic iron oxide. In the magnetic iron oxide of the present invention, a Zn content of 0.29 to 0.57% by weight of magnetic iron oxide is employed.

Magnetic iron oxides 1-3 in Table 3 on page 49 recite values in the claimed weight percentage range, while magnetic iron oxides 4-8 do not. In Table 4, on page 54, Examples 1 and 4 only are within the present claimed invention. Examples 5 and 7 utilize a magnetic iron oxide with a Zn content of 3.30% and 2.49%, respectively. Examples 2, 3 and 6 employ a styrenic binder, not a polyester binder. Comparative Examples 1-3 employ a magnetic iron oxide beyond the claimed range.

Tables 5-7 demonstrate that under varying environmental conditions, the best combination of image density and, especially, reduced fogging, before and after use, is found in inventive Examples 1 and 4, compared to the other Examples, including Examples 5 and 7. In Table 8, page 58, high image density is seen to be stable for Examples 1 and 4, while in Examples 5 and 7, lower image density is seen. In Table 9, Examples 1 and 4, best “trailing”, as noted on pages 52 and 53, is observed.

With regard to the art rejection it should initially be noted that the total content of Zn in the magnetic iron oxide used in the present invention is in the range of 0.29 to 0.57% by mass with respect to the magnetic iron oxide. Magnetic iron oxide (Fe_3O_4) has a molecular weight of 232. To the contrary, in the Kobori ‘957, a magnetic iron oxide containing Zn in an amount of 0.5 to 0.6% by weight with respect to iron is used in the magnetic toner in Example 1. To adjust the Zn % from % by weight of iron to % by weight of magnetic iron oxide the following calculation is made:

$$\text{Fe}_3\text{O}_4 = \text{Mw } 230.$$

$$\text{Fe}_3 = (56 \times 3) = 168.$$

$$\text{Therefore, } 232 (\text{Fe}_3\text{O}_4) \div 168 (\text{Fe}_3) = 1.4.$$

Multiplying 0.5 to 0.6 by 1.4 yields 0.70 to 0.84% Zn in Example 1 of Kobori with respect to magnetic iron oxide. This range is beyond the present range of 0.29 - 0.57%.

A typical magnetic iron oxide used in Kobori has a Zn content ranging from 0.7 to 0.84% by weight of magnetic iron oxide. The pH in the final stage of the oxidation reaction being 8 (column 22, lines 60-64; column 24. Table 1; columns 29-30, Table 3).


In view of these teachings and based on the experience of the present inventors, the concentration of Zn atoms in an outermost surface of the magnetic iron oxide of Kobori would be significantly less than the 1.00% which is the lower limit claimed in the present invention. In addition to failing to disclose or suggest the presently employed magnetic iron oxide, as noted by the Examiner, Kobori also fails to disclose or suggest the use of a polyester binder resin. At least for these reasons, Kobori fails to render obvious the present invention.

Doujo does not remedy the deficiencies of Kobori. While Doujo is cited by the Examiner for its disclosure related to the desirability of employing a polyester binder resin, Doujo is silent with respect to the specific magnetic iron oxide used in the present invention. Accordingly, the combination of Kobori and Doujo is ineffective to render the present invention prima facie obvious, as it fails to disclose or suggest one of the present invention's key features - namely, a magnetic iron oxide with a specific Zn content.

In view of the foregoing amendments and remarks, favorable consideration and passage to issue of the present case is respectfully requested. If, upon consideration of this paper, the Examiner believes there are any outstanding issues, it is respectfully requested that the Examiner contact the undersigned attorney in an effort to expeditiously resolve such issues.

Applicants' undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Peter Saxon", written over a horizontal line.

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